PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE   IDS

In re application of: Chen et al.

Application No. 10/017,861

Filed: December 14, 2001

For: TECHNIQUES FOR MEASUREMENT OF
PERCEPTUAL AUDIO QUALITY

Examiner: Not yet assigned

Date: May 1, 2002

Art Unit: 2183

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INFORMATION DISCLOSURE STATEMENT
PURSUANT TO 37 C.F.R. § 1.97(b)(3)

COMMISSIONER FOR PATENTS
WASHINGTON, DC 20231

Sir:

Listed on the accompanying form PTO-1449 and enclosed herewith are several English-language
and/or non-English-language documents. The non-English language documents (portions of Zwicker et al.,
Das Ohr als Nachrichtenempfanger and portions of Zwicker, Psychoakustik) related to human auditory
models. Applicants respectfully request that these documents be listed as references cited on the issued patent.

Applicants filed this Information Disclosure Statement ("IDS") before the mailing date of a first
Office action on the merits. As a result, no fee should be required to file this IDS. However, if the Patent
Office determines that a fee is required for Applicants to file this Information Disclosure Statement, please
charge any such fees, or credit overpayment, to Deposit Account No. 02-4550. A **duplicate** copy of this
Information Disclosure Statement is enclosed.

Respectfully submitted,

KLARQUIST SPARKMAN, LLP

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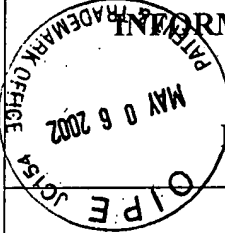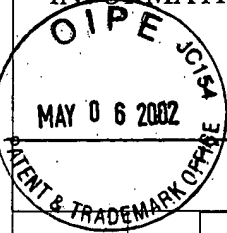Technology Center 2600

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT	Docket: 3382-61341	App: 10/017,861
	Applicant: Chen et al.	
	Filed: December 14, 2001	Art Unit: 2183

U.S. PATENT DOCUMENTS

Init.*		Number	Date	Name	Class	Sub	Filed
		5,686,964	11.11.97	Tabatabai et al.			
		5,845,243	12.01.98	Smart et al.			
		5,995,151	11.30.99	Naveen et al.			
		6,115,689	09.05.00	Malvar			

OTHER DOCUMENTS

			Gibson et al., <u>Digital Compression for Multimedia</u>, Title Page, Contents, "Chapter 7: Frequency Domain Coding," Morgan Kaufman Publishers, Inc., pp. iii, v-xi, and 227-262 (1998).
			H.S. Malvar, <u>Signal Processing with Lapped Transforms</u>, Artech House, Norwood, MA, pp. iv, vii-xi, 175-218, and 353-57 (1992).
			H.S. Malvar, "Lapped Transforms for Efficient Transform/Subband Coding," *IEEE Transactions on Acoustics, Speech and Signal Processing*, Volume 38, No. 6, pp. 969-78 (1990).
			Seymour Schlien, "The Modulated Lapped Transform, Its Time-Varying Forms, and Its Application to Audio Coding Standards," *IEEE Transactions on Speech and Audio Processing*, Vol. 5, No. 4, pp. 359-66 (July 1997).
			de Queiroz et al., "Time-Varying Lapped Transforms and Wavelet Packets," *IEEE Transactions on Signal Processing*, Vol. 41, pp. 3293-3305 (1993).
			Herley et al., "Tilings of the Time-Frequency Plane: Construction of Arbitrary Orthogonal Bases and Fast Tiling Algorithms," *IEEE Transactions on Signal Processing*, Vol. 41, No. 12, pp. 3341-59 (1993).

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*Examiner: Initial if considered, whether or not in conformance with MPEP 609; draw line through cite if not in conformance and not considered. Send copy.

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OTHER DOCUMENTS

			ISO/IEC 11172-3, Information Technology -- Coding of Moving Pictures and Associated Audio for Digital Storage Media at Up to About 1.5 Mbit/s -- Part 3: Audio, 154 pp. (1993).
			Dolby Laboratories, "AAC Technology," 4 pp. [Downloaded from the web site aac-audio.com on World Wide Web on November 21, 2001.]
			Srinivasan et al., "High-Quality Audio Compression Using an Adaptive Wavelet Packet Decomposition and Psychoacoustic Modeling," *IEEE Transactions on Signal Processing*, Vol. 46, No. 4, pp. 1085-93 (April 1998).
			Caetano et al., "Rate Control Strategy for Embedded Wavelet Video Coders," *Electronics Letters*, pp. 1815-17 (October 14, 1999).
			Ribas Corbera et al., "Rate Control in DCT Video Coding for Low-Delay Communications," *IEEE Transactions on Circuits and Systems for Video Technology*, Vol. 9, No. 1, pp. 172-85 (February 1999).
			Zwicker et al., Das Ohr als Nachrichtenempfänger, Title Page, Table of Contents, "I: Schallschwingungen," Index, Hirzel-Verlag, Stuttgart, pp. III, IX-XI, 1-26, and 231-32 (1967).
			Terhardt, "Calculating Virtual Pitch," *Hearing Research*, 1:155-182 (1979).
			Lufti, "Additivity of Simultaneous Masking," *Journal of Acoustic Society of America*, 73:262-267 (1983).
			Jesteadt et al., "Forward Masking as a Function of Frequency, Masker Level, and Signal Delay," *Journal of Acoustical Society of America*, 71:950-962 (1982).

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OTHER DOCUMENTS

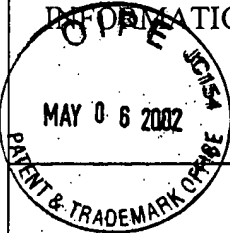|			
			ITU, Recommendation ITU-R BS 1387, Method for Objective Measurements of Perceived Audio Quality, 89 pp. (1998).
			ITU, Recommendation ITU-R BS 1115, Low Bit-Rate Audio Coding, 9 pp. (1994).
			Beerends, "Audio Quality Determination Based on Perceptual Measurement Techniques," Applications of Digital Signal Processing to Audio and Acoustics, Chapter 1, Ed. Mark Kahrs, Karlheinz Brandenburg, Kluwer Acad. Publ., pp. 1-38 (1998).
			Zwicker, Psychoakustik, Title Page, Table of Contents, "Teil I: Einfuhrung," Index, Springer-Verlag, Berlin Heidelberg, New York, pp. II, IX-XI, 1-30, and 157-162 (1982).
			Solari, Digital Video and Audio Compression, Title Page, Contents, "Chapter 8: Sound and Audio," McGraw-Hill, Inc., pp. iii, v-vi, and 187-211 (1997).
			A.M. Kondoz, Digital Speech: Coding for Low Bit Rate Communications Systems, "Chapter 3.3: Linear Predictive Modeling of Speech Signals" and "Chapter 4: LPC Parameter Quantisation Using LSFs," John Wiley & Sons, pp. 42-53 and 79-97 (1994).
			Kadatch, U.S. Patent Application Serial No. 09/771,371, entitled, "Quantization Loop with Heuristic Approach," filed January 26, 2001.
			Chen et al., U.S. Patent Application Serial No. 10/017,694, entitled, "Quality and Rate Control Strategy for Digital Audio," filed December 14, 2001.
			Chen et al., U.S. Patent Application Serial No. 10/017,702, entitled, "Quantization Matrices for Digital Audio," filed December 14, 2001.

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OTHER DOCUMENTS

			Chen et al., U.S. Patent Application Serial No. 10/020,708, entitled, "Adaptive Window-Size Selection in Transform Coding," filed December 14, 2001.
			Chen et al., U.S. Patent Application Serial No. 10/016,918, entitled, "Quality Improvement Techniques in an Audio Encoder," filed December 14, 2001.
			Wragg et al., "An Optimised Software Solution for an ARM Powered™ MP3 Decoder," 9 pp. [Downloaded from the World Wide Web on October 27, 2001.]
			Fraunhofer-Gesellschaft, "MPEG Audio Layer-3," 4 pp. [Downloaded from the World Wide Web on October 24, 2001.]
			Fraunhofer-Gesellschaft, "MPEG-2 AAC," 3 pp. [Downloaded from the World Wide Web on October 24, 2001.]
			OPTICOM GmbH, "Objective Perceptual Measurement," 14 pp. [Downloaded from the World Wide Web on October 24, 2001.]
			De Luca, "AN1090 Application Note: STA013 MPEG 2.5 Layer III Source Decoder," STMicroelectronics, 17 pp. (1999).
			Phamdo, "Speech Compression," 13 pp. [Downloaded from the World Wide Web on November 25, 2001.]
			Malvar, "Biorthogonal and Nonuniform Lapped Transforms for Transform Coding with Reduced Blocking and Ringing Artifacts," appeared in *IEEE Transactions on Signal Processing, Special Issue on Multirate Systems, Filter Banks, Wavelets, and Applications*, vol. 46, 29 pp. (1998).
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